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AUTHOR Passanante, Gail R.
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ABSTRACT

To investigate the effect of the Initial Teaching Alphabet (ITA) on spelling proficiency, a study was devised whereby seventh grade students who had been taught reading in the first and second grade using ITA were compared with students who had been taught in the traditional manner. Each group of students was tested on the spelling sections of two achievement tests and also completed a reading achievement test. Analysis of the results indicated that there was no significant difference between the ITA group and the traditional group on the spelling tests. In both groups a significant correlation existed between reading and spelling ability. The results of the study indicated that the use of the ITA as the initial teaching medium did not inhibit students' ability to learn proper English spelling, nor did it improve spelling proficiency. Reading ability proved to be a more accurate indicator of spelling performance than the method by which the student learned to read.
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SPELLING PROFICIENCY AND EARLY TRAINING
WITH I.T.A.

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APPROVED:

Edward Fry
Edward Fry

Charles R. Doty
Charles R. Doty

William B. Gillooly
William B. Gillooly

ACTING DEAN:

Mary Bach Kievit
Mary Bach Kievit

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CHAPTER I

BACKGROUND OF THE PROBLEM

One of the most important functions of the school is to teach children to read. Is the job being done? Not well enough, according to the National Council of Teachers of English. It estimates that four million elementary school children have reading disabilities. Other reports indicate that reading is the handicap of 25 to 30% of all high school students and that our nation has a minimum of eight million functional illiterates (Mazurkiewicz, 1965). These statistics are not really surprising when we consider that written English started with a Latin alphabet which was applied to a Teutonic language. Then the already unstable pronunciation was infused with Anglo-Saxon and Norman influences on the spoken language and its spelling. According to Smith (1970), this merger resulted in the haphazard spelling of Middle English, which was partly phonetic, partly traditional. With the development of the printing press, various English printers contributed their own personal idiosyncrasies in spelling many words.

We now have a language that is 20% unphonetic

and which has an almost infinite variety of letter-sound associations. For example, we have the "ough" group which includes such diverse sounds as those heard in though, tough, thorough, plough, through, and cough. Nor can anyone explain why watch does not rhyme with latch and match. In addition, the sound of long i has at least 20 different spellings, among which are the words aisle, lie, fly, buy, eye, aye, and choir.

Scholars and educators have long recognized the difficulties of English and many have advocated orthographic reform. They realize that our spelling system has resisted a completely logical development just as the different cultures through which it has evolved have resisted a completely logical development (Smith, 1970).

One medium, though by no means the first or only one, devised to simplify the decoding of the written word is Sir James Pitman's Augmented Roman Alphabet, now known as the Initial Teaching Alphabet (i.t.a.). It contains 24 of the 26 symbols from our traditional orthography (t.o.). The q and the x are dropped from i.t.a. as their sounds can be represented by other letters or letter combinations. Twenty new symbols are employed, but all except four are two-letter composites from t.o. Gibbons (1965) notes that i.t.a. was designed to be a beginning instructional

tool which would facilitate decoding and encoding via demonstrable systematic relationships between symbols and the speech they represent.

Statement of the Problem

Both Mazurkiewicz (1964) and the Bullock Commission (1975) view traditional spelling as a significant source of reading retardation, though by no means the only one. Although Mazurkiewicz (1964), in his Bethlehem study, concluded that spelling ability in children taught with i.t.a. is no different from children taught in t.o. Gillooly (1966), however, cites data which show that t.o.-trained children are indeed better spellers than i.t.a.-trained children who initially learned inappropriate spellings.

The purpose of this study was to compare spelling proficiency among seventh graders who had originally been trained to read, write, and spell in the i.t.a. medium, with seventh graders who had learned these skills in the traditional way.

Hypotheses

In undertaking this study, the following hypotheses were proposed.

1. There is no significant difference on mean Wide Range Achievement Test (WRAT) spelling scores between the group trained by i.t.a. and the group

trained by t.o. for beginning reading.

2. There will be a significant correlation between WRAT spelling scores and California Achievement Test (CAT) reading scores.

Importance of the Study

Many studies have been conducted investigating reading achievement and creative writing ability in i.t.a.-trained children, but most of these concentrated on the early grades. This study is concerned with spelling ability, which has not been thoroughly assessed. As the possible inhibitory effects of i.t.a. spellings is a matter of controversy, this study, hopefully, may contribute information toward the solution of the problem. Further, Gillooly (1966) cites the need for longitudinal studies which evaluate the effects due to i.t.a. alone.

Definition of Terms

For the purpose of this study, facilitation is the idea that practice in spelling with i.t.a. enhances spelling performance in t.o.

For the purpose of this study, inhibition is the idea that practice in spelling with i.t.a. interferes with spelling performance in t.o.

A widely used abbreviation, i.t.a. refers to the Initial Teaching Alphabet devised by Sir James Pitman.

For the purpose of this study, orthography refers to the English (or Latin) alphabet.

Phonemic pertains to the smallest unit of sound that has meaning.

Phonetic pertains to the study of speech sounds.

The abbreviation t.o. stands for "traditional orthography" and is often used when comparisons are made with i.t.a.

Limitations of the Study

This study is limited to the investigation of spelling skills as developed by i.t.a.-trained children, several years after the transition to the traditional orthography, as opposed to children who were exclusively t.o. trained. The children were divided into only two groups: those who learned to read using i.t.a., and those who learned using the traditional orthography, regardless of the method of instruction employed.

Overview of the Study

Chapter II deals with a review of the literature and reports pertinent information on the research findings. Both sides of the i.t.a. controversy are fully explored and summarized.

Chapter III details the procedure to be used in this study. It describes the population studied, the selection, and administration of tests, and the

way in which the data was treated.

Chapter IV discloses the findings of this study and presents illustrative material which show the relationship between learning to read with i.t.a. and subsequent acquisition of spelling proficiency. The materials are correlated and interpreted in terms of the hypotheses stated in Chapter I.

Chapter V is a summary of the study, presenting the author's conclusions regarding the hypotheses, with suggestions for further research in the field.

CHAPTER II

REVIEW OF THE LITERATURE

History of Reform Efforts for English Orthography

Orthographic reform has been a hotly debated issue both in the United States and Great Britain for hundreds of years. Reformers have devised systems which run the gamut from moderate, in which our traditional alphabet is preserved and gradual spelling changes introduced, to the radical, in which our present system is thrown out and replaced by a completely new sound-symbol system.

As long ago as 1551, John Hart suggested that changes were necessary because of "irregularities." He charged that our writing system suffers from a symbol shortage because of the fact that only 26 letters represent the 40 or so graphemes of English (Gillooly, 1973). Pei (1967) relates that as early as 1837, Britain's Isaac Pitman (grandfather of Sir James Pitman, cited earlier) devised a method of stenography which opened the eyes of many scholars to the deficiencies of English spelling and showed the advantages of phonetization. His International Phonetic Alphabet

led to the first serious attempts at phonetic spelling reform. This was also the impetus for the creation of the Augmented Roman Alphabet which has since become known as i.t.a.

George Bernard Shaw, a radical in his views toward reform, proclaimed that an alphabet reform would save 20% of the working time in the average writer's life span. He created a 44-character, non-Roman alphabet. Later, he changed it to 40 characters to increase its efficiency and save 25% of a writer's time. Shaw contemptuously dubbed as "Johnsonese" conventional English. This was in derogation of the lexicographic work of Samuel Johnson, whose 1755 A Dictionary of the English Language did much to stabilize and fix English spelling in the mold in which we know it (Tauber, 1963). Johnson, himself, felt that popular appeal should fix language standards. Though he tried to put a premium on "correct" spelling, he was torn between the conflicting forces of analogy, etymology, and pronunciation. His argument against reform was that the reformers would be taking "that for a model which is changing while they apply it," which means in effect that the process of phonetization would have to be repeated every 50 or 100 years to keep pace with spoken-language changes (Pei, 1967, p. 345).

Bernard Shaw (cited in Tauber, 1963), often

revolutionary in his own views, had little patience with less drastic reforms. Columbia University Professor Brander Matthews, who had written "The Simplification of English Spelling" for Century Magazine of August, 1901; and Shaw's friend William Archer who wrote "Spelling Reform or Phonetic Spelling" for the Morning Leader, August 10, 1901 favored a gradual revision of the orthography, rather than total revision, which they dismissed as "impracticable." Shaw's rejoinder to them was that the impact of the printed word on pronunciation could not be overstated. A man could not be prevented from interpreting an unfamiliar word phonetically and pronouncing or mispronouncing it as it was spelled. Rather than the gradual orthographical reform, proposed by Matthews and Archer which preserved the etymology of words, Shaw concluded that we must either reform our spelling phonetically or leave it alone entirely.

Early American advocates of spelling reform were Benjamin Franklin, Noah Webster, and Horace Mann. Gillooly (1973) describes Leigh's 70-symbol writing system used in Boston in the 1870s. This Pronouncing Orthography was augmented by a light-faced type of "silent" letters. At the end of the first grade, the children who used reading books printed in Leigh's simplified orthography were at a point normally reached

at the end of the second grade. This success led the Boston School Committee in 1871 to speak glowingly of a system which could "add a year to the practical duration of human life" (p. 182).

In 1906, Melvel Dewey, a founder in 1876 of the Spelling Reform Association, convinced Andrew Carnegie to support spelling reform. Dewey and Professor Brander Matthews of Columbia University organized a group of well-known philologists and lexicographers into the Simplified Spelling Board. The plans of this Board, as well as its publications and activities, won the approval of President Theodore Roosevelt. On August 27, 1906, President Roosevelt directed the Public Printer to use a list of 300 simplified spellings recommended by the Board, e.g. altho, catalog, center, honor, jail, labor, program, tho, thru, and whisky in all United States Government publications of the Executive Department. This aroused much controversy and Congressional disapproval, as well as attracting international attention (Tauber, 1963). In spite of the disapproval most of the aforementioned words are in general use today.

Time Magazine, January 25, 1971, contained an article about the late Col. Robert R. McCormick, owner of the Chicago Tribune. In 1934, he set out in the Tribune to change Chicago's spelling habits. He called

his innovation "Simplified Spelling" and included such words as hocky, fantom, sherif, definitely, and frater (freighter). McCormick insisted that three-quarters of his readers preferred it. However, by the time of his death in 1955, the list of simplified words which had once numbered as many as 80 words, had shrunk considerably. The reasons given for this was to bring the Trib style closer to that of most other papers and wire services and current teaching in American journalism schools. Still widely accepted "Tribisms" are tho, thru, and analog.

Many simplified spellings have originated in the commercial world and have simply stuck. Some of these are nite, nitery, donut, ketchup, and sox.

In 1965, Representative Harlan Hagen of California offered a bill to create a "U.S. official dictionary" to be prepared by a five-man commission that would be authorized to "wring superfluous silent letters out of American words" (Pei, 1967, p. 342).

Orthographic reform has been carried out in many countries in the past. The Government of Turkey did this with no apparent ill effects, but such change is relatively easy where most of the population is illiterate. It is more difficult where most are literate. However, there are languages in the world that come close to being phonemic. Examples given by

Mazurkiewicz (1968) are Italian, Castillian Spanish, and Finnish. In these languages, learning to spell becomes a simple process of learning to match a set of letters with the sounds and combinations of sounds called for by the spoken utterances. Learning to spell a phonemically written language involves a simple process of conditioning. Learning to read is just as simple. The letter is an almost 100% reliable clue to word attack and pronunciation. Sebasta (1965) cites Turkish, Spanish, and Moro languages with closer sound-to-letter consistency than ours. Most of the children who speak those languages have a much easier time learning to spell. Insofar as reading requires matching sound to letter, they also appear to have a much easier task in learning to read. Orlow (1976), in a study of literacy in West Germany, found that they have spelling and reading difficulties despite the fact that German has a much more consistent grapheme-phoneme correspondence than English. One reason is that in German most graphemes decode as only one phoneme, but a good many phonemes encode into more than one grapheme. Hall (1961) states that it is clearly apparent that no conventional orthography--even those which are highly phonemic--ever reflects its language completely: there are always features of sentence melody, stress, and juncture (the way in

which phonemes are joined in the stream of speech) that are notated imperfectly or completely neglected in writing. Yet, those interested in reform, like Dr. James Soffietti (Mazurkiewicz, 1968) say that learning to read English is no less a frustrating and time-consuming process than learning to spell it. The same difficulties in reverse are involved. The lack of consistency between the letter and the phoneme it spells reduces to a fractional minimum its reliability as a symbol for a specific sound. In other words, in English the letter is not a primary clue to vocalization as it is in Italian. Thus, reading English becomes a difficult process of word and sentence analysis for secondary clues, meaning, structural, and form clues, to word attack and pronunciation.

Although this chapter primarily contains the experimental data on i.t.a., it is necessary to mention that i.t.a. is not the only modern spelling reform which has attracted attention in education. A somewhat similar approach is a 40-symbol alphabet called Unifon. It was devised by John Malone, a Chicago economist, and has been tried experimentally in some schools.

Other Initial Teaching Orthography
Approaches

Arthur Heilman (1967) describes three other initial teaching approaches. The first is Fry's "Diacritical Marking System," in which additional printed signs are used to represent particular sounds-- a bar over vowels representing long vowel sounds; a slant line through silent letters; underlining of digraphs; a dot over vowels indicating the schwa sound; and a bar under letters representing irregular sounds for that letter. A sample sentence would be: "Once upon a tīmē Little Red Hen lived in a barn with her fīvē chicks" (p. 119). This system preserves the traditional spelling of words but adds clues to pronunciation.

Frank C. Laubach's Learn English the New Way utilizes a slant line following any vowel which has its long sound, and in addition respells many words: smile--smi/l; quite--qui/t; woman--wuumun; deceive--de/seev.

Caleb Gattengo uses words in color for teaching beginning reading. The initial instruction involves the use of visual stimuli which provide two visual clues: (a) the traditional letter configurations, and (b) color. The objections to this method are that some children have difficulty discriminating between

colors and shade, and children who learn to rely on color cues would have difficulty outside of class without the charts used in school.

In all of these systems, there is a heavy emphasis on phonetics; and according to Jean Chall (Gardner, 1968), "most children--including most disadvantaged children--learn to read best in the initial stages by a method that stresses breaking the alphabetic code" (p. 831).

The Initial Teaching Alphabet, originated in England and devised by Sir James Pitman, is the basis for this study. It was designed to be a beginning instructional tool which would facilitate decoding and encoding via demonstrable systematic relationships between symbols and the speech they represent. It was, in fact, specifically designed to facilitate transition to t.o. Students taught in i.t.a. do not work exclusively in this medium. All printed matter they see in their homes, on television, and on signs are in t.o.; and the children are encouraged to read materials printed in t.o. once the transition has begun (Olson, 1966).

In the United States, according to Downing (1964), i.t.a. was first tried by the Anita Metzger School at Ventnor, New Jersey. Mrs. Metzger, Principal of this private school, introduced i.t.a. into her

kindergarten in January, 1963, after visiting classes in England and Wales.

Experimental Studies

The first full-scale experiment testing i.t.a. was begun in Bethlehem, Pennsylvania, by Dr. Albert Mazurkiewicz, then Head of the Reading Center at Lehigh University. The 1963 first-grade population consisted of 454 i.t.a. and 947 t.o.-taught children. The children were normal in intelligence and had similar pre-school experiences. They were instructed by teachers of similar age, experience, and training backgrounds. In-school time factors, availability of materials and resource persons, special instructional activities, etc., were carefully controlled. The following were conclusions of this study:

1. Traditional spelling is a significant source of difficulty, though not the only factor in reading retardation.
2. Children can learn to read more quickly (and with less observable frustration) when using i.t.a.
3. Children learn to communicate through writing with a high degree of facility.
4. Children develop independent work habits earlier than what was considered usual.
5. Reading performance in t.o. after transition

is significantly better than in children taught only in t.o.

6. Spelling ability is no different from children taught in t.o. (Mazurkiewicz, 1964).

The advantages of i.t.a. based on the observations by Mazurkiewicz (1965) are:

1. Improvement of speech defects as a natural by-product

2. Greatly reduced reading failures

3. Advanced children who are sped to high reading levels

4. Children who write more abundantly and about many more subjects than children learning in t.o.

5. Wide personal reading among these children

The following are some objections raised concerning the first i.t.a. study:

1. The program did not give enough attention to comprehension.

2. There are still inconsistencies in sound-symbol relationships in i.t.a.

3. The enthusiasm of the teacher may have influenced the results of the program (Olson, 1966).

In subsequent studies, Mazurkiewicz tried to control the effects of teacher enthusiasm. Gillooly (1973) notes that i.t.a. is not as consistent a

writing system as it could be because of the need, imposed by its transitional nature, to adhere within limits to traditional orthography. The example he gives is of the ligatured ch which is used in church and which, but not in naetuer, though they have this element of sound in common. He cites Osgood's principle of transfer that "the higher the degree of stimulus similarity between two situations with the degree of response similarity being as high as it is here, the greater the positive transfer" (p. 180).

Fry's (1969) study, sponsored by the United States Office of Education, which compared i.t.a., t.o., and his DMS, was done at the end of grades one, two, and three. At the end of the first grade, the spelling grade scores of the DMS, t.o., and i.t.a. groups were: DMS, 1.7; t.o., 1.9; i.t.a., 1.6. At the end of the second grade: DMS, 3.0; t.o., 3.1; i.t.a., 3.3. At the end of the third grade: DMS, 3.7; t.o., 3.8; i.t.a., 3.9. His finding was that in the Spelling subtest of the Stanford Achievement Test, the i.t.a. group was significantly inferior at the end of first grade. However, when the test was rescored allowing both i.t.a. and t.o. spellings, the group was no longer inferior. After the transition period, at the end of grades two and three, there was no longer any significant difference between the groups in

spelling.

Hayes and Wuest (1969) conducted a three-year longitudinal and two-year replication study of different approaches to beginning reading. They compared a basal reading program represented by Scott, Foresman and Company, a phonics approach published by J. B. Lippincott Company, which is a combination of whole word plus phonics approach using the materials and methods of Scott, Foresman and Company and supplemented with Phonics and Word Power, published by American Education Publications, Inc., and the Early to Read i/t/a Program published by i/t/a Publications, Inc. The Treasury of Literature Series of Charles I. Merrill Books, Inc. was used when i.t.a. pupils made the transition to traditional orthography. By the end of grade three, the means in spelling were: Scott, Foresman, 4.4; phonics approach, 4.4; Lippincott, 4.8; i.t.a.-Merrill, 4.5. Their conclusion, regarding spelling proficiency, was that those pupils introduced to reading through the i/t/a-Merrill program were not confused in the area of Spelling.

Gillooly (1966a) refutes Mazurkiewicz's claim of spelling parity in i.t.a. and t.o.-trained children. His analysis of the results obtained on the Spelling subtest of the Stanford Achievement Test shows that the t.o.-trained children are significantly better spellers

(in t.o.) than the i.t.a. trained. He mentions that Fry points out that the i.t.a. group's deficiency is the result of the group's having learned inappropriate spelling, for there was no significant difference between the groups when i.t.a. spelling was scored as correct. Gillooly finds no reason to believe that i.t.a. is more effective in teaching children to read the traditional alphabet than other established programs. He finds, however, evidence which strongly supports the conclusion that i.t.a. children are inferior spellers, though these effects may not last.

In Reading Research Quarterly, Gillooly (1973) refers to two well-controlled studies in the United States comparing i.t.a. children with others reading t.o.

The first was done by Hayes and Nemeth, 1966, after four months of instruction. The other was by Chasnoff, 1965, after seven months of instruction. Both used the Stanford Achievement Test, Primary I, Form W (printed in i.t.a. for the experimental groups). The researchers concluded that:

1. The superiority of i.t.a. children was specific to the subtests Word Reading, Word-Study Skills, and Spelling (with i.t.a. spellings scored as correct for those groups).

2. The Paragraph-Meaning subtest scores and

Vocabulary scores were not affected by the writing system employed.

Gillooly (1973) concluded from his study of research data that if the orthography is simple enough, it is possible for a child to read materials that he is unable to comprehend. Though, on the average, i.t.a. children exceed their t.o. counterparts in word recognition, they do not excel in comprehension. Word recognition may be a more difficult task in t.o., but not to the extent that children's reading comprehension suffers.

In reply to Gillooly's analysis of the Spelling subtest described earlier, Mazurkiewicz (with Dolmatch, 1966) states that second-grade spelling was first tested on the Stanford Achievement Spelling Test and that the i.t.a. children's results were, indeed, significantly better than their t.o. counterparts, whether the raw or matched pair sample results were used.

Since the original Bethlehem experiment in 1963, Mazurkiewicz and others have done follow up, replication, and longitudinal studies. As a result of this work, Mazurkiewicz (1974) stated that:

After eleven academic years and eighteen student years of study and reflection, research shows that . . . i.t.a.-trained children develop high spelling skill in i.t.a. fairly early. The transition to spelling t.o. in the two years subsequent to initial reading is relatively easy when directed instruction and guidance in spelling are given; and

the achievement on standardized tests and in creative writing is significantly better. (p. 157)

In his longitudinal study of the 1963 first grade i.t.a.-t.o. population through the 10th- and 11th-grade years, Mazurkiewicz (1975) used the SRA Assessment Survey Skills Profile. He found that the subtest Spelling approaches significance at the .05 level favoring the i.t.a. population. The results suggest to him that the i.t.a. to t.o. pattern of teaching spelling has had a lasting positive effect, and, in his opinion, refutes expert suppositions and assumptions that negative effects should result. In an accompanying questionnaire of the same study, students were asked to express their attitudes towards i.t.a. Mazurkiewicz notes: "In contrast to the better and almost significant achievement data on spelling, i.t.a. taught students feel their spelling is not quite as good as their t.o. counterparts" (p. 247).

Other investigators in the field were Petty, Murphy, and Mohan (1974) who studied 573 children in grades three, four, and five in order to determine the effect of teaching sound-symbol correspondences on spelling achievement. One of their purposes was to find out whether the children who were taught the initial teaching alphabet made more "rational" misspellings--or misspellings that were related to sound-

to-symbol generalizations. They concluded that:

1. Children who are taught to read in a program using i.t.a. appear to spell no better or no worse than children in other reading programs.

2. Evidence indicates that the children who have been initially trained in i.t.a. misspell words in both "rational" and "irrational" ways; and there is no significant difference between these children and the children taught traditional orthography.

3. The spelling achievement of children who were taught the initial teaching alphabet showed no significant differences from the spelling achievement of other children.

The process of transition, moving from i.t.a. into t.o., had been thought by many to be almost automatic. While there are indications that there is considerable incidental t.o. learning without formal transition instruction, researchers have tended to suggest that there are many difficulties involved. For example, Shapiro, Willford, and Shapiro (1971), in their observation of i.t.a. project classes, concluded that:

1. The assigned level of posttransition reading material in t.o. was typically below the readability level of the last book in the i.t.a. program.

2. Teachers found it necessary to do considerable

posttransition diagnostic teaching in order to enable the child to handle t.o. materials adequately.

3. Children continued to use i.t.a. symbols in their written work.

4. The quality of transition programs may be responsible for the decrease in achievement levels of the i.t.a. children.

The Bullock Report is a comprehensive investigation of reading as taught in British schools. It is, according to Downing (1976) the "most important official pronouncement on the teaching of reading ever to have been published in Britain" (p. 379). It was published in February, 1975, by the Government Department of Education and Science. There were 22 people on the committee which was chaired by Sir Alan Bullock, F.B.A., a former Vice-Chancellor of Oxford University.

At the time of the Bullock Report, 9.1% of all schools in Britain were using the i.t.a. for beginning reading instruction. The Commission found that in all schools the level of decoding is of special importance in the early stages of learning to read. They also found that the complexity of English spelling patterns, as noted earlier, does, indeed, appear to retard progress. Because of this, the teacher needs a sound understanding of the problems encountered by the learner due to this evident irregularity in the

phoneme-grapheme relationship of the English writing system.

In studying the schools which used i.t.a. as the initial teaching medium, The Bullock Commission (1975) stated that one obvious advantage of using a modified spelling system such as i.t.a. rather than a cueing technique (e.g., color coding) is that it helps writing as well as reading. They further stated that children tend to learn quite quickly how to spell in i.t.a., and they then have ready access to almost every word in their spoken vocabulary.

Bullock cites a study by Downing and Latham, who tested a sample of the children originally involved in the i.t.a. experiment in Britain. They found that the i.t.a. pupils remained superior in t.o. reading and spelling even after five years at school, or well beyond the transition stage.

The Commission concluded that

the co-existence of two writing systems during the introductory and transitional period does not seem to be a handicap. This observation coincides with the Schools Council report that the difference between the alphabet used in school and that used outside does not represent a significant problem. (p. 111)

With all the controversy and discussion surrounding the acquisition of spelling skills, many have raised the question as to whether spelling ability is important. After all, many people who have little

trouble with reading may still spell uncertainly when they write. Some will have difficulty with spelling all their lives. Does it matter? Smith (1970) says that it does. He says that our spelling system is part of our language, and those who spell words incorrectly are judged by many as either uneducated or careless. The Bullock Commission (1975) concurs in that spelling disability is an undoubted handicap in society. It adds that confidence in spelling frees the child to write to fulfill his purpose.

It has been suggested by Valmont (1973) and others that spelling skill may not be an automatic by-product of learning correct phoneme-grapheme correspondences. Valmont feels that good spellers have developed a "spelling consciousness," the ability to know that a word one has written is spelled correctly or incorrectly or that one is doubtful of the spelling. From his examination of research data, he theorizes that spelling consciousness is related to intelligence, overall academic achievement, and abilities such as visual discrimination, functional knowledge of phonics, and correctness in using homonyms. He advocates the development of spelling consciousness as a desirable and necessary function of the schools, if they are to produce adequate spellers.

Past reformers and current advocates of reform

and augmentation have observed the seeming confusion reigning in our orthography and concluded that it is a hopeless mess, out of which no order can be brought. Others have looked at the language and arrived at the notion that each English word has its own spelling which is unrelated in its structure to any other word, as far as its representation of sound is concerned. Widespread though these ideas may be, however, linguists are finding that they are quite erroneous. Even though our English spelling system may seem capricious, it is not entirely so; there is a basic pattern to the way in which it symbolizes the language. Among the various graphemic representations, some are more consistent and more frequent than others. In general, English orthography does afford to each phoneme of the language at least one regular, clear, and consistent alphabetic representation (Hall, 1961). In fact, states Gillooly (1973),

It may be concluded that ours is not an irregular or unlawful system. Rather, its regularity is of a more complex, indirect sort. Our writing represents elements of meaning as well as elements of sound. (p. 178)

Many believe that tradition and the perverse pride of those who have mastered English are the main stumbling blocks to orthographical reform. Other arguments against reform include the loss of etymological values and the need for periodic revision.

Some cogent reasons against radical reform are given by Hall (1961) and include the following points:

1. Such a drastic change would involve too great a readjustment in our culture's habits.
2. It would involve an impossibly great expense in reprinting even the most essential books.
3. A tremendous number of intellectually valuable but financially unprofitable writings would go unreprinted and would speedily be lost to all but antiquarians.

Moderate reform and augmentation has been widely explored as a tool for beginning reading instruction in schools both in the United States and Britain. The initial teaching alphabet has probably received more attention over a longer period than any other recent teaching innovation. However, there is no clear-cut indication that i.t.a. provides a definitely superior system for reading instruction. The experimental data, so far, is inconclusive as to spelling skills acquired by i.t.a.-trained children, and there is some evidence that negative transfer may occur in children who have initially learned inappropriate spellings.

CHAPTER III

METHODOLOGY

In order to discover the level of spelling proficiency among seventh grade children who were taught beginning reading using the initial teaching alphabet as compared with seventh graders who were taught reading in the conventional manner, a standardized test was administered to both groups. In addition, overall reading achievement test scores, measured by standardized tests administered by the school system on a periodic basis, were compiled for all students involved in the investigation. The study was designed to discover if there was any negative carry-over of inappropriate spellings learned by i.t.a.-trained children. This was a post hoc study in which students had been given beginning reading in grades one and two, and were now being tested in grade seven.

Population

One hundred nine seventh graders in two communities were used in this study. The experimental group was composed of 54 students at North Plainfield Junior High School (N.P. School), who had been taught

beginning reading in the first and second grades in the i.t.a. medium. The fifty-five students in the control group were drawn from a junior high school in a nearby community (H.H. School), who had been taught in the traditional manner. All were considered average students and following a middle track English program.

Community Types

Testing was conducted using students in the public school system of North Plainfield, New Jersey, and in another nearby school system which provided a control group. North Plainfield is a suburban community which had, at the time of the 1970 census, nearly 22,000 residents. The population is nearly 98% White and less than 1% Black. North Plainfield is a middle-class community with about 3% of the families having an income below the poverty level. The median income of families in 1969 ranged between \$9,514 and \$14,841. The mean income of these families was \$10,157 to \$16,654. There are four elementary schools in town and one high school, housing grades seven through twelve. The school enrollment in 1970 was 3,800, but for the 1976-77 school year was down to 3,282. Minority groups made up about 5.6% of the student population.

The community from which the control group was drawn had, in 1970, a total population of 67,120, a 50% increase over 1960 figures. It was projected in the last census that by 1985, the population figure would stand at 105,289. At the time of the 1970 census, 98% of the residents were White and the other 2% Black and other. This city, on a major highway, is highly industrialized, with many large companies housed within an industrial park. The median income of families in 1970 was \$12,914 and the mean income was \$14,662. There are 15 elementary schools, 3 junior high schools, 2 high schools, and 1 special education building. The total enrollment in the public schools, as of June, 1971, was 15,149. An additional 88 students attended county vocational schools and 1,800 were in private and parochial schools. Approximately 64% of those graduating went to institutions of higher education.

Selection of Tests

The instrument used in testing the i.t.a.- and t.o.-trained children was the Spelling subtest, Level II of the Wide Range Achievement Test (WRAT), Revised Edition, 1965. This test is easy to administer in a group or individual situation. It provides a grade equivalent score for each subtest. The reliability coefficients for the Spelling subtest, Level II of

the WRAT are split-half coefficients based on odd-even scores and range from .979 to .987. Validity of this test was determined by the correlation of test results with outside criteria such as teachers' ratings or chronological age; the correlation of these test scores with other tests such as the WISC and WAIS; the correlation of the achievement scores with mental ability or intelligence ratings; a factor analysis of a large number of abilities to determine the factor loadings inherent in each subtest. In the test manual, the WRAT is characterized as a convenient tool for the study of basic school subjects of reading, written spelling, and arithmetic computation. It was designed to be used as an adjunct to other tests of intelligence and behavior adjustment. Buros (1972) finds that the WRAT

may have some value in a clinical or a research setting in which one is testing individually persons of such diverse ability or background that one cannot tell in advance what level of test would be appropriate. (p. 37)

The examiner chose a dictated spelling test rather than a multiple-choice type test in order to analyze misspellings in terms of i.t.a. carry-over.

Administration of Tests

Permission was secured from the administration of the North Plainfield public schools and from the

building principal of the control group to administer the WRAT to four seventh-grade classes. The students in these classes were average students.

North Plainfield has been using i.t.a. as its initial teaching medium since the 1960s. Students who had transferred into the school system and had not been exposed to i.t.a. were identified by having them make a note at the top of their test blanks. They were tested in a classroom situation with their teacher present. Each child received a test blank on which he recorded his name, birthdate, sex, school, and grade. The students were instructed to try to spell each word dictated, and were informed that this test had no bearing on their school grades. The examiner then followed the test manual in administering the test.

The method of testing in the control groups was essentially the same. Students who had been exposed to i.t.a. in other school systems were asked to note this at the top of their test blanks and were not included in this study.

CHAPTER IV

RESULTS AND DISCUSSION

The study was designed to measure any carry-over of i.t.a. patterns when the student reaches seventh grade and whether the learning of traditional spelling forms is inhibited. In order to determine if any significant differences existed, the experimental and control groups were matched in reading achievement and compared in spelling proficiency on a standardized test. Only students who fell into the fourth, fifth, and sixth stanines of the reading test portion of the California Achievement Test were examined. The two groups were compared overall by percentile rank on the CAT reading test and spelling proficiency measured on the Wide Range Achievement Test.

Results

Hypothesis I

As summarized in Table 1, there was a mean percentile difference between the experimental and control groups of 5.2, which was not statistically significant on a t score. Since there was not a

significant difference between the i.t.a. group and the t.o. group, the hypothesis is upheld. The medium in which these two groups of students learned to read did not affect their spelling proficiency. However, there was a small actual percentile difference favoring the i.t.a. group who scored at the 44.9 percentile and the t.o. group who scored at the 39.7 percentile. See Tables 1 and 2.

TABLE 1
MEAN CAT READING SCORES AND WRAT SPELLING
SCORES IN I.T.A.- AND T.O.-
TRAINED STUDENTS

Group	<u>N</u>	CAT Reading		WRAT Spelling	
		Mean Percentile	<u>SD</u>	Mean Percentile	<u>SD</u>
i.t.a.	54	53.8	15.3	44.9	28.5
t.o.	55	51.5	14.7	39.7	18.9
Difference		2.3 ^a		5.2 ^a	

^aNot significant on t score.

TABLE 2

t SCORES OF BOTH GROUPS IN READING
AND SPELLING (N = 109)

Test	<u>df</u>	<u>t</u>
CAT Reading	107	.79 ^a
WRAT Spelling	107	1.19 ^a

^aNot significant at .05 level.

Hypothesis II

There was a significant correlation at the .01 level between spelling ability and reading achievement. Reading ability and spelling proficiency are related. Hypothesis II is upheld. However, significance of a correlation only shows that there is some relationship between the two factors. The strength of the relationship as indicated by an r of .49 for the i.t.a. group and an r of .46 for the t.o. group is only classified as moderate. See Table 3.

TABLE 3
CORRELATION BETWEEN WRAT SPELLING SCORES/
CAT READING SCORES

	<u>N</u>	<u>r</u>
Correlation for N.P. School (i.t.a.) ^a	54	.49 ^c
Correlation for H.H. School (t.o.) ^b	55	.46 ^c

^aN.P. School students were tested on WRAT in May, 1977 and on CAT in March, 1977.

^bH.H. School students were tested on WRAT in May, 1977 and on CAT in September, 1976.

^cSignificant at .01 level.

Discussion

Although group means were studied for statistical purposes, wide variations existed in individual students'

reading and spelling achievement. Valmont (1973) reports on a study by Plessas and Dilson, who studied good readers who were good spellers and good readers who were poor spellers. They found that both groups were equally able to identify correctly spelled words. However, the good spellers were

better at visual discrimination when given phonic clues, were less confused and more often correct in spelling homonyms, and were better able to transfer learning in writing variants and compounds from known words. (p. 59)

Valmont, in the same article, cites another study by Grothe, in which she concluded that intellectual and academic abilities are related to spelling consciousness, the ability to know when a word is spelled correctly or incorrectly. Spelling consciousness is a variable which cannot be controlled in students, regardless of the medium in which they are trained and would seem to account for the wide range of spelling proficiency in both the experimental and control groups. Techniques for enhancing spelling consciousness might be of benefit to all students.

Although 37% of the i.t.a.-trained students in this study scored at or above their actual grade placement, as compared to 29% of the t.o.-trained pupils who scored at or above actual grade placement, it is not possible to say whether this slight superiority was due to the initial teaching medium, the

care with which spelling was taught during the transition period and later, or to individual student differences in spelling capability.

In correcting the spelling tests of the i.t.a.-trained students, an informal effort was made to determine whether spelling errors were due to i.t.a. training. Prefixes and suffixes were used correctly, and vowel digraphs, the letters qu and other consonants were used according to traditional orthography. Misspellings of specific words, such as quantity and anxiety, which would have been spelled differently in i.t.a. than in t.o. were compared for both groups. There appeared to be no carry-over of i.t.a. spelling patterns.

This study has several serious limitations which suggest caution in applying the results. They are partly caused by the problems in doing an ad hoc study more than five years after treatment. Data was not available on the drop-out rate in first or other grades. There were problems in obtaining a control group which was identical. In fact, the t.o. group did have slightly lower reading scores; but they were not significantly lower. Only percentile scores, and not raw scores, were available for analyzing the reading tests results.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

A study of spelling proficiency among students who had been taught reading in first and second grades in the i.t.a. medium and those who were taught reading initially using the traditional orthography was undertaken five years after the training period. The researcher attempted to measure whether either method produced significantly superior spellers. Only students who had been exclusively trained in one medium or the other were included in the data. All students were of average reading ability as determined by the Reading Test section of the California Achievement Test.

When all students were given the Spelling subtest of the Wide Range Achievement Test, Level II, there was no significant difference between the i.t.a.-trained and the t.o.-trained groups. This finding is in agreement with other studies.

There was a moderate correlation found to exist between reading achievement and spelling proficiency. A t test showed that the experimental and control

groups were not significantly different in this respect. The WRAT manual reports a correlation between its Reading and Spelling subtests of .916 for 12 year olds and .876 for 13 year olds, the general age group of students in seventh grade. The relatively low correlation found in this study may be due to the fact that testing was limited to middle-range students.

Conclusions

It seems apparent, from the results of this study and from earlier studies, that the use of a modified or augmented orthography which creates a closer phoneme-grapheme correspondence than traditional orthography does not, of itself, produce children who are superior in spelling ability to children who learned to read using the basal, linguistic, or highly phonetic approach. Though this study did not attempt to investigate those attributes which characterize the good speller, it was determined that reading and spelling ability are related. These no-difference findings should be viewed in light of the limitations mentioned earlier related to lack of drop-out data, equivalence of control group, and lack of raw scores for analyzing reading tests.

Spelling proficiency is still a highly valued skill in our society, and as such, must be a carefully

considered aspect of the early reading program and in subsequent grades. New approaches to word consciousness should be developed and implemented, because the poor speller is at a serious disadvantage in school and in life.

Suggestions for Further Research

Some questions which arise from the study of i.t.a. as an initial teaching medium are: Would the small actual difference observed between the i.t.a. and t.o. group in mean spelling performance become significant in a large-scale study which included also the high and low reading ability groups? Could spelling ability be enhanced in the posttransitional period by a more careful selection of a reading program? What is the effect of the quality of posttransitional teaching on spelling ability?

Most research on i.t.a. has dealt with student competency in reading and creative writing. More research needs to be done on what factors produce a good speller and how poor spelling ability can be improved by attention to these factors. More longitudinal studies will also have to be undertaken on students initially trained in i.t.a. to determine the effects of posttransitional spelling instruction on subsequent achievement.

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APPENDIX A

TEST RESULTS OF I.T.A. AND T.O. GROUPS
ON WRAT SPELLING AND CAT READING

I.T.A.-TRAINED STUDENTS

Student	<u>California Achievement Test (Reading)</u> ¹		<u>Wide Range Achieve- ment Test (Spelling)</u> ²	
	G.E. ³	N.P. ⁴	G.E.	N.P.
1	5.6	24	6.3	27
2	6.5	32	6.1	23
3	6.5	32	5.2	13
4	6.5	32	4.6	9
5	6.5	32	4.9	12
6	6.6	33	5.8	19
7	6.7	35	6.8	34
8	6.8	37	6.8	34
9	6.9	39	6.3	27
10	6.9	39	4.9	12
11	6.9	39	5.5	16
12	6.9	39	6.1	23
13	7.0	40	6.5	30
14	7.0	40	6.1	23
15	7.0	40	7.0	37
16	7.0	40	9.0	70
17	7.1	42	7.2	39
18	7.1	42	6.8	34
19	7.3	43	7.2	39
20	7.3	43	10.8	91

¹Administered April, 1977; actual grade placement of students: 7.7.

²Administered May, 1977; actual grade placement of students: 7.9.

³Grade Equivalent.

⁴National Percentile.

I.T.A.-TRAINED STUDENTS--Continued

Student	<u>California Achievement</u> <u>Test (Reading)</u>		<u>Wide Range Achieve-</u> <u>ment Test (Spelling)</u>	
	G.E.	N.P.	G.E.	N.P.
21	7.4	45	8.1	55
22	7.5	47	7.4	45
23	7.6	49	7.2	39
24	7.6	49	9.3	75
25	7.6	49	6.8	34
26	7.7	51	3.3	3
27	7.9	53	11.6	95
28	8.0	55	6.3	27
29	8.2	57	6.5	30
30	8.2	57	6.8	34
31	8.5	61	8.4	61
32	8.5	61	9.0	70
33	8.5	61	10.5	88
34	8.5	61	5.8	19
35	8.5	61	8.1	55
36	8.5	61	7.6	47
37	8.6	63	6.5	30
38	8.8	66	9.0	70
39	8.8	66	7.8	50
40	9.0	68	9.3	75
41	9.0	68	8.4	61
42	9.0	68	6.7	32
43	9.2	70	11.6	95
44	9.4	72	6.1	23
45	9.4	72	7.6	47
46	9.4	72	9.3	75
47	9.6	74	9.9	82

I.T.A.-TRAINED STUDENTS--Continued

Student	<u>California Achievement</u> <u>Test (Reading)</u>		<u>Wide Range Achieve-</u> <u>ment Test (Spelling)</u>	
	G.E.	N.P.	G.E.	N.P.
48	9.6	74	4.9	12
49	9.6	74	6.3	27
50	9.6	74	8.7	66
51	9.6	74	9.3	75
52	9.8	77	11.6	95
53	9.8	77	9.9	82
54	9.8	77	7.0	37

TRADITIONALLY TRAINED STUDENTS

Student	<u>California Achievement Test (Reading)¹</u>		<u>Wide Range Achieve- ment Test (Spelling)²</u>	
	G.E. ³	N.P. ⁴	G.E.	N.P.
1	5.7	24	5.5	16
2	5.7	24	4.3	7
3	5.8	27	4.0	5
4	6.0	31	6.1	23
5	6.1	31	7.0	37
6	6.1	31	5.2	13
7	6.3	34	6.3	27
8	6.4	34	6.8	34
9	6.4	34	9.0	70
10	6.4	34	9.6	76
11	6.4	34	7.6	47
12	6.4	34	7.6	47
13	6.5	38	4.9	12
14	6.6	42	5.5	16
15	6.6	42	4.9	12
16	6.6	42	7.2	39
17	6.8	46	6.1	23
18	6.8	46	6.5	30
19	6.8	46	7.4	45
20	6.9	46	6.1	23

¹Administered September, 1976; actual grade placement of students: 7.0.

²Administered May, 1977; actual grade placement of students: 7.9.

³Grade Equivalent.

⁴National Percentile.

TRADITIONALLY TRAINED STUDENTS--Continued

Student	<u>California Achievement</u> <u>Test (Reading)</u>		<u>Wide Range Achieve-</u> <u>ment Test (Spelling)</u>	
	G.E.	N.P.	G.E.	N.P.
21	6.9	46	6.5	30
22	6.9	46	6.1	23
23	6.9	46	7.4	45
24	6.9	46	6.8	34
25	7.1	50	7.8	50
26	7.1	50	8.4	70
27	7.1	50	7.8	50
28	7.1	50	6.3	27
29	7.2	54	7.2	39
30	7.2	54	7.2	39
31	7.2	54	6.8	34
32	7.3	54	6.3	27
33	7.3	54	7.4	45
34	7.3	54	6.7	32
35	7.3	54	9.3	75
36	7.5	58	6.7	32
37	7.5	58	7.8	50
38	7.6	62	7.2	39
39	7.6	62	7.4	45
40	7.6	62	8.1	55
41	7.7	62	4.6	9
42	7.7	62	7.8	50
43	7.8	66	9.0	70
44	7.8	66	7.6	47
45	7.9	66	6.5	30
46	8.0	69	7.0	37
47	8.1	69	6.5	30

TRADITIONALLY TRAINED STUDENTS--Continued

Student	<u>California Achievement</u> <u>Test (Reading)</u>		<u>Wide Range Achieve-</u> <u>ment Test (Spelling)</u>	
	G.E.	N.P.	G.E.	N.P.
48	8.1	69	9.0	70
49	8.2	73	8.1	55
50	8.3	73	8.4	61
51	8.3	73	7.0	37
52	8.4	76	9.6	79
53	8.5	76	8.7	66
54	8.5	76	8.4	61
55	8.5	76	7.2	39

APPENDIX B

WIDE RANGE ACHIEVEMENT TEST

SPELLING, LEVEL II

WIDE RANGE ACHIEVEMENT TEST, LEVEL II--SPELLING LIST AND PRONUNCIATION GUIDE

1. cat..... The cat has fur..... kăt
2. run..... Bob can run fast..... rŭn
3. arm..... His arm hurt..... ärm
4. train..... The train was crowded..... tran
5. shout..... If you shout, he'll hear you..... shout
6. correct..... Put down the correct answer..... kŏ rĕkt'
7. circle..... The circle is a round drawing..... sĕr'k'1
8. heaven..... Heaven surrounds the earth..... hĕv'ĕn
9. educate..... Parents educate their children..... ĕd' ū kăt
10. material..... The material was expensive..... mă tĕr'ĭ ă1
11. ruin..... The house was in ruin after the fire..... rŏo'ĭn
12. fashion..... The dress is now in fashion..... făsh' ŭn
13. believe..... I believe you are right..... bĕ lĕv'
14. suggestion..... My suggestion was followed..... sŭg jĕs' chŭn
15. equipment..... The office got new equipment..... ĕ kwĭp'mĕnt
16. majority..... The majority voted for the bill..... mă jŏr'ĭ tĭ

WIDE RANGE ACHIEVEMENT TEST, LEVEL II--SPELLING LIST AND PRONUNCIATION GUIDE

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|-----|------------------|--|-----------------|
| 17. | institute..... | The art <u>institute</u> held an exhibit..... | ŷn' stŷ tŷt |
| 18. | literature..... | Some <u>literature</u> is worth reading..... | lŷt' ěr ħ tŷr |
| 19. | reverence..... | Old people are treated with <u>reverence</u> | rěv' ěr ěns |
| 20. | museum..... | The art <u>museum</u> held an exhibit..... | mŷ zě' ŷm |
| 21. | precious..... | Health is <u>precious</u> | prěsh' ŷs |
| 22. | illogical..... | His thinking was <u>illogical</u> | ŷl lŷj' ŷ kħl |
| 23. | decision..... | Your <u>decision</u> was accepted by all..... | dě sŷzh' ŷn |
| 24. | quantity..... | He ate a large <u>quantity</u> of food..... | kwŷn' tŷ tŷ |
| 25. | executive..... | The governor is a state <u>executive</u> | ěg zěk' ŷ tŷv |
| 26. | necessity..... | Food is a <u>necessity</u> of life..... | ně sěs' ŷ tŷ |
| 27. | opportunity..... | He had no <u>opportunity</u> for success..... | ŷp ŷr tŷ' nŷ tŷ |
| 28. | anxiety..... | Floods create <u>anxiety</u> among people..... | ħng zŷ' ě tŷ |
| 29. | conscience..... | His <u>conscience</u> was clear..... | kŷn' shěns |
| 30. | physician..... | Our family <u>physician</u> examined me..... | fŷ zŷsh' ħn |
| 31. | courteous..... | Let's be <u>courteous</u> to everybody..... | kěr' tě ŷs |
| 32. | possession..... | He took <u>possession</u> of the house..... | pŷ zěsh' ŷn |

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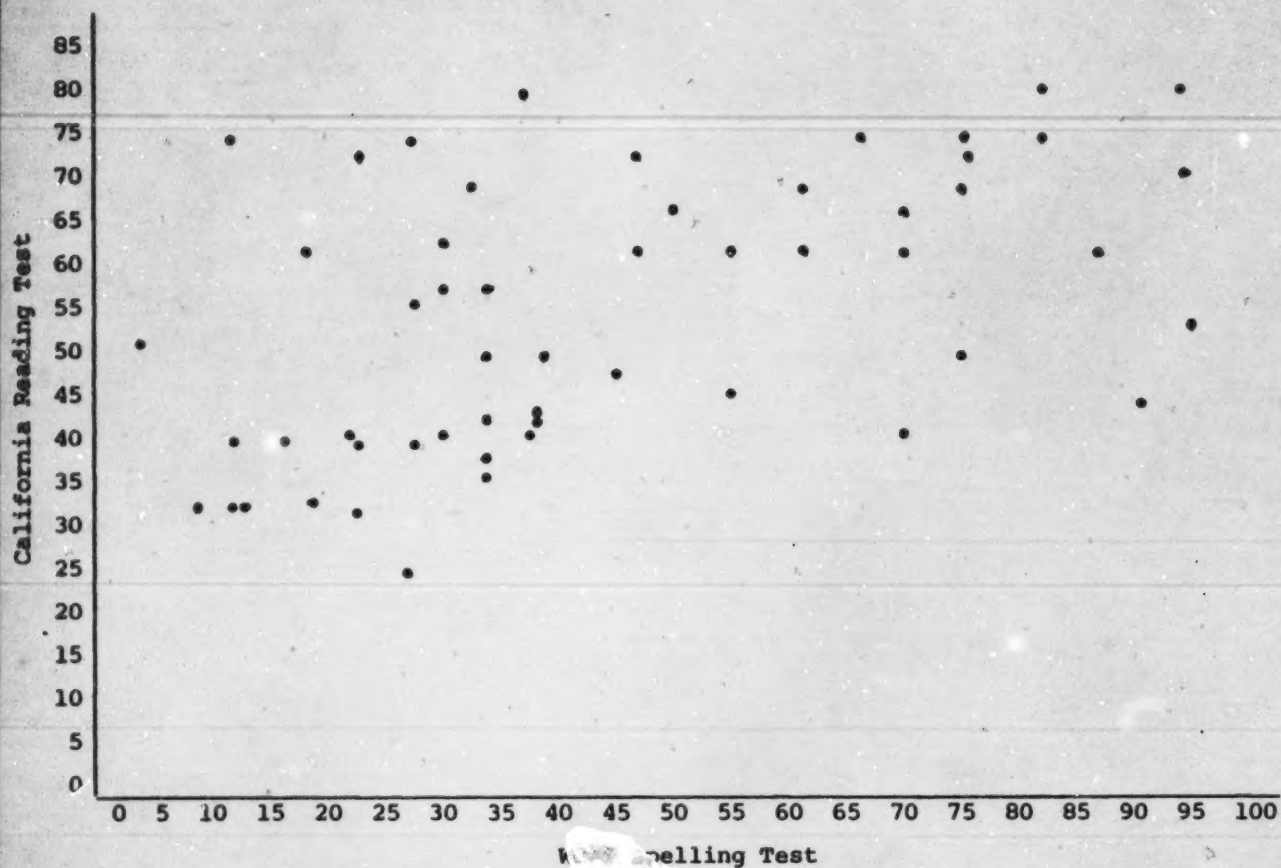
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- | | | | |
|-----|--------------------|--|------------------|
| 33. | lucidity..... | We think best in moments of <u>lucidity</u> | lū sld'ĩ tĩ |
| 34. | exaggerate..... | Don't <u>exaggerate</u> your accomplishments..... | ĕg zăj'ěr āt |
| 35. | privilege..... | It was a <u>privilege</u> to meet the astronaut..... | prĩv'ĩ lĩj |
| 36. | loquacious..... | He was <u>loquacious</u> during the interview..... | lō kwā'shŭs |
| 37. | medieval..... | <u>Medieval</u> times were long ago..... | mĕ dĩ ē'vāl |
| 38. | effeminate..... | He is an <u>effeminate</u> person..... | ĕ fĕm'ĩ nĩt |
| 39. | resilient..... | Steel is more <u>resilient</u> than lead..... | rē zĩl'ĩ ĕnt |
| 40. | sovereignty..... | The country kept its <u>sovereignty</u> | sōv'ěr ĩn tĩ |
| 41. | assiduous..... | <u>Assiduous</u> effort gets results..... | ă sĩd'ũ ũs |
| 42. | irresistible..... | His idea was <u>irresistible</u> | ĩr rē zĩs'tĩ b'l |
| 43. | acquiesce..... | To <u>acquiesce</u> is to comply with a demand..... | ăk wĩ ĕs' |
| 44. | charlatan..... | A <u>charlatan</u> is a pretender..... | shār'lă tăn |
| 45. | pusillanimous..... | A <u>pusillanimous</u> person is weak in spirit..... | pū sĩ lăn'ĩ mŭs |
| 46. | iridescence..... | <u>Iridescence</u> is a play of colors..... | ĩr ĩdĕs'ĕns |
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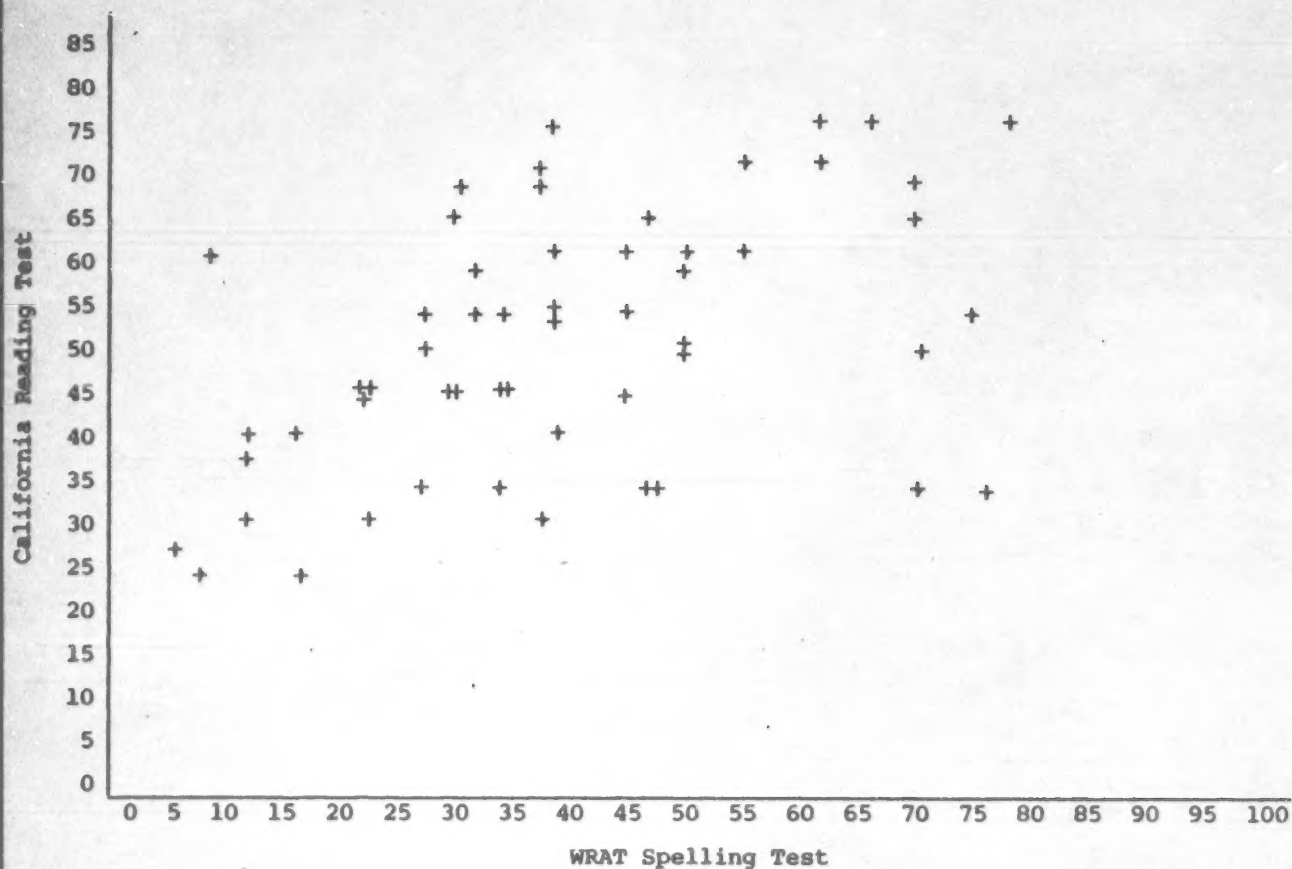
APPENDIX C

SCATTERGRAMS SHOWING CORRELATIONS
BETWEEN CAT AND WRAT

N.P. SCHOOL (I.T.A. GROUP) SCATTERGRAM SHOWING CORRELATION BETWEEN CAT AND WRAT
N = 54



H.H. SCHOOL (T.O. GROUP) SCATTERGRAM SHOWING CORRELATION BETWEEN CAT AND WRAT
N = 55



COMBINED SCATTERGRAM SHOWING CORRELATION BETWEEN CAT AND WRAT
FOR N.P. (I.T.A. GROUP) AND H.H. (T.O. GROUP) SCHOOLS

N = 109

